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FEBRUARY
1950

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Photo by Walter Phoenix

COVER PICTURE

This picture of the Concord Public Library is shown for two reasons: first because no one sent in a photograph of work under construction, and second to show the location of the A. I. A. exhibit next month. There is a story about the Exhibition elsewhere in this issue.

The Library was completed in 1941. Lyford and Magenau were the architects, in association with Alfred Morton Githens and Francis Keally of New York. General Contractor was E. J. Pinney Co. of Springfield, Mass., and the project was erected under P. W. A.

The cover view shows the modern design contrasting with the classical lines of a nearby building. In fact the Library is set amongst a heterogeneous group of buildings and if any traditional style had been chosen for it, the confusion would have been still further confounded. As it is, the simple, clean lines seem to have a unifying effect.

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ARCHITEXTOPICS

By Eugene F. Magenau

We notice that many newspapers continue to reproduce photographs or drawings of an architect's work without crediting the author. This is a prime example of editorial discourtesy. Such appropriation of private property for unauthorized use (referring particularly to drawings) seems hard to justify. The January issue of the A. I. A. BULLETIN contains an article with specific suggestions for ensuring "credit where credit is due."

The Registration Board has recently distributed its annual report and roster. Thumb-ing through the pages of this little booklet, we looked in vain for the name of the "State Architect." Of course the registration law is not mandatory—illogically enough—but it would be reassuring for the public to know that supervisory personnel has met the same minimum standards as those supervised. Perhaps his papers are being processed.

Some architects have expressed a growing concern about the architectural sub-division of the proposed new Public Works Department. On the one hand it appears that it might get pigeon-holed into a routine inspection and clerical service by not being given adequate authority and responsibility; on the other hand, it seems possible that it might take over more and more of the work of architects in private practice. Commissioner Merrill has come out strongly against this latter situation, but very little is known about the former. We hope the Governor and his advisors are getting advice on these aspects from persons who know a great deal about architectural and building engineering practice.

They could muff a great chance to do an outstanding service to the people of New Hampshire by properly setting up the agency which will supervise the design and construction of state buildings. So far the A. I. A. men have supported the proposal; will we be disillusioned again?

We understand that Theodore Postma's model of Carl Peterson's design for a bank in Manchester is a real museum piece. It is made of plastics, wood and metal, at a scale of 3/16" to 1 foot and is as complete on the inside, including furnishings, as on the outside. If

arrangements can be made, this model will be displayed at the Chapter meeting in Manchester on the 16th. After seeing it, it will be surprising if many more architects do not avail themselves of Mr. Postma's superb modeling skills.

Something has gone wrong this month because three of the boys who were scheduled to contribute to the N. H. ARCHITECT failed to come through. Even President Witmer didn't get in his usual cheery message! The delinquents were Nick Isaak, Clarence Pratt and Ed Miles. We're glad you're so busy, boys, but wish you wouldn't take it out on yours.

Concord Man Honored By Paint Salesmen

Rowland Oakes, manager of the Shaw-Williams Co., of Concord was presented a pin as retiring president of the New Hampshire Paint Salesmen's club. The presentation was made recently by John Flint of the Pittsburgh Plate Glass Co., at the annual meeting of the club at Scott's tearoom.

Lou Levesque of the Pittsburgh Plate Glass Co. was named to succeed Mr. Oakes as president. Other officers installed were Mr. LeBel of J. J. Moreau & Son, Inc., vice-president; Charles Mroczynski, Cobban Wall & Paint Store, sergeant-at-arms; George Lowe Brothers, and Donald A. Bernier of National Gypsum Co., entertainment committee.

Three new members initiated into the organization included Edward J. Thompson of the Benjamin Moore Co.; Russell Pollard of England Paint Works; Homer LaBonte, of Pittsburgh Plate Glass Co.

N. H. Chapter, A. I. A.

Regular February Meeting

THURSDAY, FEBRUARY 16, 1950

Carpenter Hotel, Manchester

Executive Board Meeting - 5:30 P. M.

Dinner 7:00 P. M. Ala

Speaker: Robert C. Dean of the firm of E. Shaw & Hepburn, Boston.

Subject: Slides and talk on the new John Marsh store in Boston. Development of signs. Unique features of construction services.

Competition Program to be Released Soon

The long-awaited competition program for the new state office building to house the Highway, Motor Vehicle and State Police departments, will be released shortly, according to Highway Commissioner, Frank D. Merrill. The Professional Adviser, Prof. L. B. Anderson, of M. I. T. is working out final details which will be in general accord with the A. I. A. Competition Code, and will include nearly 30 pages of detailed requirements of the state departments for which the building is being planned.

The competition will be open to all architects registered in New Hampshire as of February 1, 1950. Applications must be made to Prof. Anderson for the program, and entrants must submit evidence that they have furnished complete architectural services for at least five buildings which have been built.

The following drawings will be required:

- Plot plan at scale of 1"=200 feet.
- Four plans at 1/16" scale.
- All elevations and one section at 1/16" scale.
- Perspective from Southeast at optional scale.
- Elevation of typical bay at 1/4" scale.

The design must not exceed 600,000 cubic feet in volume nor \$500,000 in cost, exclusive of taxes, and must also meet other requirements for allocation of floor areas, ceiling heights and beam clearances.

A committee representing the State must confer with the professional jury of three architects as to selection of winning designs; the committee will then recommend to the Governor and Council that awards be given to those winners. In case the building should not be constructed for any reason, the prizes awarded will constitute full and final discharge of obligations on the part of the State. It is expected that the competition drawings will be publicly exhibited in several localities, immediately following announcement of the winners.

Contractor: "Daughter, I object to those two-piece bathing suits."

Daughter: "But, Father, I really think I should wear something!"

"And so I told her that I loved her and that we'd be married in the summer."

"July?"

"No, I meant it."

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Outline for Building a New School

SCHOOL BOARDS AND BUILDING COMMITTEES TAKE NOTE:

This outline has been prepared jointly by a subcommittee of the N. H. Chapter, A. I. A., working with the N. H. State Department of Education. It is in tentative form only but is included in this issue in order to be available for District Meetings in March. The outline might be equally useful to Boards of Selectmen or town building committees. Constructive criticism is earnestly desired by both authors.

- (1) School housing needs become felt in the community.
- (2) School Board begins investigation of building needs.
- (3) School district studies building needs.
 - (a) By the school board acting as a planning or investigating committee. The employment of an educational consultant or architect serving in the capacity of consultant may be necessary in the preparation of this report.
 - (b) By a school planning committee appointed by the school district. Membership should include school board members who know the building needs better than lay members. As in (a) either an educational consultant or architect may be needed to guide the committee in arriving at a decision.

Note—Planning committees and school boards need funds to cover travel expenses, cost of printing and when necessary the employment of professional consultant.

- (4) Preparation of report on School Building Needs.
 - (a) Survey made to determine needs more exactly.
 - (b) Data assembled for approval by committee.
 - (c) Long-range plan developed and approved.
 - (d) Immediate building needs determined.
 - (e) Financial program determined.
 - (f) Borrowing ability of district studied.
 - (g) Credit data made available to prospective bond purchasers.
 - (h) Legal aspects studied by town or district counsel.

- (5) Report submitted to the public.
 - (a) Printed report must be in the hands of voters well in advance of district meeting.
 - (b) Committee presents report to the public in small groups.
 - (c) Use of radio, local paper and personal distribution.
- (6) School district meeting acts on building needs.
 - (a) At annual meeting or special meeting called for the purpose.
 - (b) Warrant must have been specifically prepared to authorize construction of school, appropriation of funds, issuance of bonds and appointment of a building committee.
 - (c) Building committee may be appointed by school board or a committee including the school board.
 - (d) Funds must be appropriated for:
 1. Preliminary investigation.
 2. Site acquisition.
 3. Legal services.
 4. Architectural services.
 5. Construction.
 6. Equipment.
 7. Grading and landscaping.
- (7) Building committee continues work of Planning Committee.
 - (a) Selects architect for building construction.
 - (b) Selects and acquires the site after the advice of the architect.
 - (c) Prepares material for bond issue using:
 1. School district clerk's report including original warrant, notice of posting, action at meeting, actual vote on bond issue.
 - (d) Accepts a schedule for meeting with architect and local school administrator on building program.
- (8) Selection of architect.
 - (a) By direct selection, (same as selecting a lawyer).
 - (b) By preferential selection, after interviewing several architects in the region, either by their request or by invitation.
 - (c) By limited competition among a few invited competitors — that A. I. A. members cannot

pete unless competition is fairly conducted in accordance with A. I. A. code.

- (d) By open competition.—see note above.

Program of architect proceeds to prepare plans and specifications.

- (a) Prepares preliminary drawings after necessary "give-and-take" conferences with building committee.
- (b) Preliminary drawings approved by board of education and submitted to State Department of Education for recommendation.
- (c) Final drawings and specifications prepared.
- (d) Final drawings and specifications checked and approved by building committee.
- (e) Final drawings and specifications submitted to State Department of Education for final recommendations in accordance with statute.
- (f) Final approval given to drawings, specifications, and selection of site by school board as required in N. H. Revised Laws, Chapter 141, Section 1.
- (g) Bid and contract forms prepared by architect.
- (h) Project advertised for bids by contractors.

Program of architect following the bidding.

- (a) Contract awarded to lowest responsible bidder upon the approval of a performance bond.
- (b) Deductions figured by lowest bidder only, if necessary and possible to come within appropriation.
- (c) Building committee may reject any or all bids and take new bids based on modified plans.
- (d) Supplementary supervision of construction provided by owner if full time inspection by clerk-of-works is desired.
- (e) Construction proceeds under architect's supervision at frequent intervals.
- (f) Contract awarded for furniture or equipment not covered by general contract.
- (g) Progress reported at successive stages—foundations, first floor, building enclosed and completion.
- (h) Contract completed, building ac-

cepted.

- (i) Building equipped with furniture, apparatus and machines.
- (j) Building occupied.

TO SCHOOL BUILDING COMMITTEES

Do

- (1) Allow sufficient time for the architect to prepare your plans. This is necessary whether he is preparing the preliminary or final drawings.
- (2) Employ local architects whenever possible, if you feel they are fully qualified. The local architect frequently has a great deal of interest in the project and frequently is just as well qualified as his far-away colleague.
- (3) Have the articles in your school district warrant carefully prepared. The future of the project is determined by the legality of the articles and the action taken by the meeting.
- (4) Treat architect candidates with respect. Allow them their interview at the appointed hour, give them a reasonable amount of time for the interview, judge them on merit and let them all know promptly of the decision of the selecting committee.

Do Not

- (1) Don't accept free sketches from an architect, even if offered. This is unethical under the rules of the American Institute of Architects, and it places the committee under obligations.
- (2) Don't ask an architect to make a survey or prepare any material for the use of the school board and school superintendent unless the architect will be later employed or paid for his services.
- (3) Don't invite several architects for an interview as candidates for a job when the committee has already chosen the architect for the work.
- (4) Don't appropriate funds for a project until the actual cost is very well determined. Every effort should be made to secure a careful estimate or budget of costs before the district meeting makes its appropriation.
- (5) Don't expect the architect to control cost unless you also allow him to determine size or quality or both. Cost is the resultant of the other two so if you fix these,

(Continued on page 16)



Hall's Camera Supply Shop, Newport, N. H.

Interior Shot of Wheeler Gymn.

Wheeler Gymnasium at Newport Dedicated

SCHOOL BOARD ACCEPTS BUILDING FROM CONTRACTOR

Newport residents and taxpayers recently had an opportunity to inspect the new \$150,000 George B. Wheeler Memorial Gymnasium at its dedication ceremonies and open house. The building was presented to John T. Lee, chairman of the Newport School Board by general contractor Donald D. Snyder, Sr. Eugene F. Magenau, of Lyford & Magenau, Concord, one of the speakers at the dedication program, explained the construction of the new gymnasium, and outlined the project which has been under construction for the past seven months. Mr. Magenau told his audience that the architects had been accorded the utmost in cooperation from the general contractors and sub-contractors.

The gymnasium, with its 48 x 84 foot basketball court of rock maple, can be separated by electrically operated folding, sound-proof doors into two distinct parts, allowing boys' and girls' gym classes at the same time. Duplicate locker facilities are provided at each end of the gym-

nasium. Seating capacity of 1,000 was made possible by the use of folding bleachers. Movable, fan-type baskets and an electric scoreboard make the Newport gym one of the most modern in the state. Other than the basketball court, the gymnasium provides a spacious lobby with a ticket booth, offices for the athletic director, an equipment room and toilet facilities.

The Wheeler gymnasium has a number of features, both in design and construction. The building was planned as the first stage of a logical expansion program so that classrooms, a cafeteria and an auditorium may be easily added in the future, if needed. No money was spent for the decorative elements, and its style and design is due wholly to the choice of structural systems, materials and colors. The outstanding structural feature is the rigid steel frames, of which there are five, spanning a distance of 70½ feet, with a vertical dimension at mid-span of only 14½ inches. These were chosen to give a flat roof which would not interfere with the lighting in the present auditorium nor in future classroom wings. Special windows were installed on the west side of the building; these windows bend the sun rays away from the floor and out of the play area, eyes, while still producing an abundance

nt. Fire resistive materials were used throughout the building, and self-closing fire doors separate the gym from the non-fire-proofed school building.

Lyford & Magenau, Concord, were the architects for the project, and Donald D. Snyder & Son, Inc., Gardner, Mass., was the general contractor. Sub-contractors included Dezero & Wendell, Rutland, Vt., plumbing and heating; Arthur T. Costigan, Concord, electrical; A. W. Merrien Co., Manchester, sheet metal work; Lyons Iron Works, Manchester, structural steel; and Rowell Brothers, Newport, building materials.

DAVISON TO ERECT NEW BUILDING

Carl G. Davison, head of the Davison Construction Co. of Manchester, announced recently that he has purchased the site of the old Rimson Block at Elm and Kidder Streets, Manchester. The block was gutted by fire over three years ago and was never rebuilt, but Mr. Davison stated that he intends to erect a modern mercantile building on the property, his firm doing the construction work.

Building Up Six Percent in New England

Contracts awarded for building and engineering projects in New England reached \$643,220,000 last year and showed an increase of 6 percent over the preceding year, it was reported today by James A. Harding, district manager of F. W. Dodge Corporation.

Awards by government agencies showed an 11 per cent increase over the preceding year, the over-all public-agency contract volume of \$263,700,000 reflecting a 6 percent increase in public nonresidential awards, a 69 per cent gain in public housing contracts, and a 7 per cent decline in public engineering awards.

Private awards in the region last year amounted to \$379,520,000, an increase of 3 per cent over 1948. Private nonresidential volume was down 18 per cent, private residential increased 10 per cent, and private engineering awards climbed 172 per cent during the year.

The nonresidential total of \$208,424,000 was 11 per cent lower than in the preceding year, with educational, science, hospital and institutional building showing gains. Manufacturing building awards dipped 51 per cent and social and recreational building was off 21 per cent.

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GEORGE B. WHEELER GYMNASIUM

Wishes to congratulate the town of Newport, the School Authorities, and Building Committee on their latest addition to the physical plant of the school department.

Also, we wish to pay tribute to the excellent design used by the Architects, Lyford & Magenau, which makes this building outstanding in its field.

DONALD D. SNYDER

DONALD D. SNYDER, JR.

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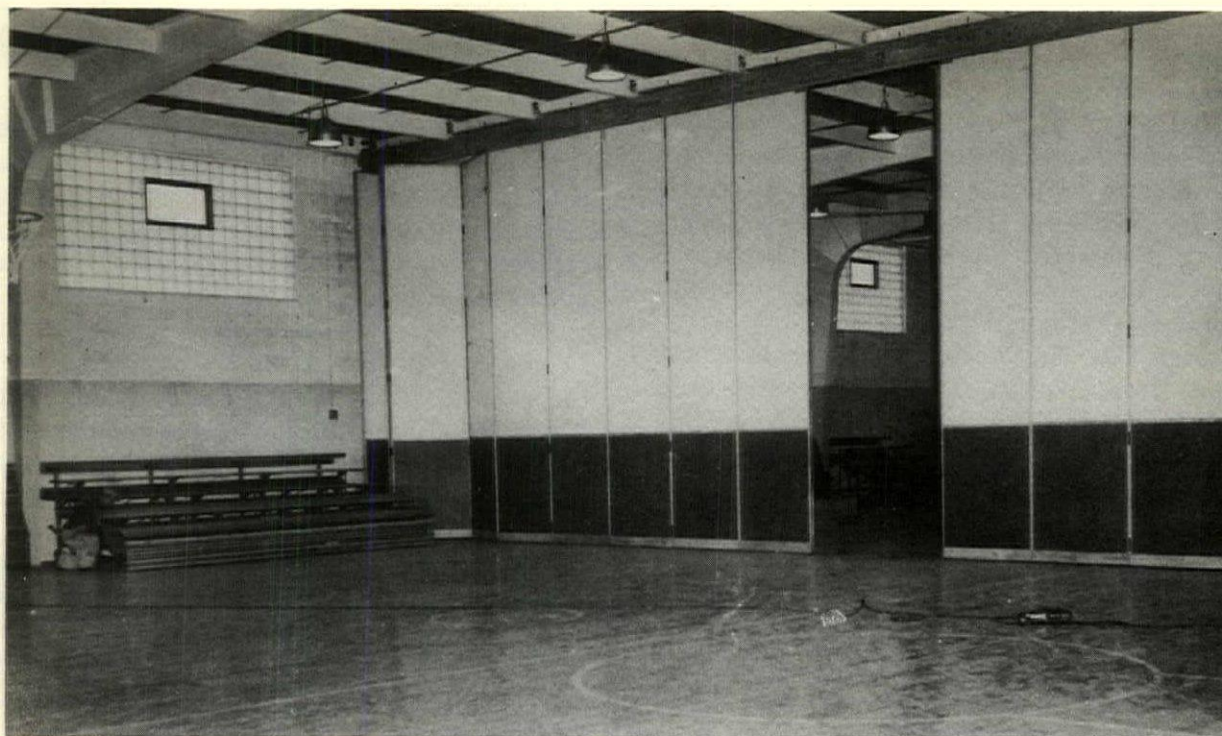
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Granite State Studio, Keene, N.

Wells Memorial School, Harrisville (Chesham) N. H.

Wells Memorial School Nearing Completion

The Wells Memorial School, nearing completion, in Chesham, will serve the town of Harrisville of which Chesham is a part and will replace several obsolete district schools. Gifts of land and funds exceeding \$60,000 were donated by Mr. Wellington Wells of Chesham, and the balance of the money necessary to secure the building was raised by the School District of which Charles L. Bowlby of Marlboro is Superintendent. All the present schools will be closed this month and their students will occupy the building for the first time immediately after the February vacation.

Included in the building, for which Norman P. Randlett of Laconia, N. H., is the Architect, will be three classrooms, and an activity and lunch room. Adjacent to the latter will be a combination library and stage, kitchen, and storage rooms. Other rooms include boys' and girls' toilets, boiler room, and a teachers' room with its own toilet. In addition to the larger toilets there is a small one in the primary room for the exclusive use of the beginners.

A folding partition separates one class room from the activities room. When the partition is opened the two rooms form an auditorium for school and community use.

In each class room are green chalkboards,

cork tack boards, storage spaces, and an activity bench with shelves below. The primary classroom includes a wardrobe. Lockers in the corridor serve the other two class rooms.

Walls are of masonry. Interior walls are of cinder blocks and the exterior walls are of cinder blocks faced with brick. The cinder block walls have been painted, two colors being used in each room. The colors, all light in shade, include gray, green, yellow, and rose.

Steel sash has been used throughout the structure. In the class and activity rooms, colored glass vision strips are used in the lower part of the windows, the upper part being light transmissional glass blocks. All class rooms have bilateral lighting.

Floors are concrete laid on gravel and covered with asphalt tile. Greaseproof asphalt tile is on the kitchen floor. Rubber base paint is on the floors of the toilet rooms.

Ceilings are of insulating tile, with acoustical tile in the corridor, activities room, and kitchen. Wallthick insulation is above all ceiling tile.

Heating is forced hot water and the fuel is oil. Each class room and the teachers' room has its own thermostat.

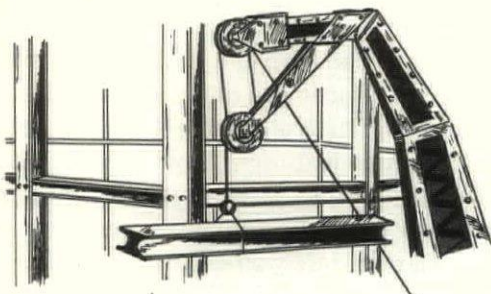
Water is secured from an artesian well. Each class room has its own lavatory with hot and cold water, and there is a drinking fountain in each room.

The class rooms, activities room, kitchen, and

toilets have mechanical ventilation. Electrical work includes indirect lighting, signal gongs, and a fire alarm system. The general contractor is The MacMillin Company, Inc., of Keene, N. H. Sub-contractors include Rivers & Henry, Keene, N. H., heating, plumbing, and ventilation; Wm. C. Metz, Franklin, N. H., electrical; asphalt tile flooring, Concord Floor Covering Co., Concord, N. H.; glass block and paint materials, Pittsburgh Plate Glass Co.; steel sash, (Detroit Steel Products Co.) Steel Equipment Corp., Laconia, N. H.; hardware, Manchester Hardware & Supply Corp., Manchester, N. H.; roofing, Brattleboro Roofing & Sheet Metal Co., Brattleboro, Vt.; painting contractor, Couture Brothers, Burners Falls, Mass.; glazing, Lawrence Plate and Window Glass Co., Lawrence, Mass.; brick, Ferguson Co., Boston; cinder block, Conn. Valley Block Co., W. Springfield, Mass.; ready-mixed concrete, Arthur Whitcomb, Inc., Keene, N. H.; mill work, Newport Woodworking Co., Newport, N. H.; structural steel, Lyons Iron Works, Manchester, N. H.; chalkboards, Bay State Blackboard Co., Boston, Mass.; metal door bucks and metal toilet partitions, J. G. Waxman, Boston; steel lockers, Andrew Wilson Co., Lawrence, Mass.

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Quality Check List - Key to School Cost Control

Reprinted by Permission From Engineering
News Record of October 27, 1949

SOMETHING CAN be done about cost control in school construction. Well planned, attractive, efficient and durable buildings can be built in any given locality in a wide range of unit costs to suit community purses.

Schools were found to cost from \$6.99 to \$21.79 per square foot in a survey made by ENGINEERING NEWS RECORD (reprinted in the January N. H. ARCHITECT). These differences are definitely not just a matter of conditions in areas or localities. In a typical locality on a site of average difficulty and accessibility, the governing board and the planner can choose to build a good school for less than \$8 per square foot, or for \$20, or more, as they see fit.

In most cases the total amount of money available for a school project is a fixed sum, and the problem is one of fixing a quality level that will permit the construction of the required amount of space and facilities. It is relatively rare that the governing board first fixes the level of quality and completeness desired, then the amount of space, and finally proceeds to the business of raising the required funds.

Inasmuch as the usual problem is one of adjusting the project to a fixed budget, it is important to consider what cost items most affect the total project cost. The governing board—with the advice and guidance of a competent specialist in school architecture—should make the choices and decisions that determine unit costs with all the cards on the table, to save where saving is advisable, to put quality where quality is the most economical in the long run.

Costs Analyzed

Drawing from a wide experience as specialists in school planning and school architecture, the firm of Ernest J. Kump and Mark Falk, San Francisco school architects, has recently released the results of an analysis by Alfred Christensen, their chief planning consultant, of factors that enter into cost control. Here they are:

(a) **Quality levels in both buildings and equipment.**—Although a consistent standard of quality in any building is a virtual necessity, exceptions should be made where items affect costs out of proportion to their

utility. Fancy hardwoods, tiles, acoustic boards, hardware, plumbing fixtures or light fixtures, when used consistently in the higher grades, boost unit costs far more than the difference between best and average structural items. The alternatives of quality level and their effect on first-costs in a number of major instances, are noted in Table A on the following page.

(b) **Completeness in equipment and facilities.**—Basic to unit cost determination are questions of completeness of classrooms, playgrounds, all special facilities, toilets and playground equipment. Completeness means adequacy of equipment in relation to the number of students—dispersion of such items as cabinets, blackboards, lights and toilets. Some of the choices as to completeness both in and out of the building are outlined for study in Table B.

(c) **Extent of site development work.**—The costs of playgrounds, driveways, walks, parking and landscaping are determined largely by site factors—climatic conditions regulating outdoor living and the physical nature of the site. The costs of site improvement will represent an adjustment of local needs according to site conditions, as in the instances cited in Table C.

(d) **Extent and complexity of utilities and services.**—This is another factor that is heavily related to site selection, and also to building codes. The time for the board to make fixing decisions on these questions is during the process of site location. Once the school is located, the minimum cost of utilities is fairly well established, any likely economies thereafter can be realized only by installation of simple utility systems rather than elaborate ones. Situations of high, low and medium costs in sewerage, electric, water and gas and other utility supply are presented in Table D.

(e) **Quantity and difficulty of foundation work.**—Foundation costs depend largely on site conditions and design considerations that are basically structural, making control by the planners very difficult. In some instances however, the planner may recognize that it will be less costly in the long run to pay high foundation costs in a central location than it would be to pay transportation costs for a majority of the students to an outlying area if such a site were selected.

Good Drawings a Must

(f) **Skill, care and completeness in preparation of drawings and specifications.**—The accuracy with which construction expenses can be controlled is determined mainly by the accuracy of the preliminaries. Without complete understanding of just what in the school

ting the money, planners cannot safely assume that their tailor-made schoolhouse will have tailor-made unit costs. If the plans and specifications are skillfully, completely and accurately prepared the school district can expect more favorable bids and consequently lower unit costs than will result from preliminaries, lacking in clarity and detail. In the latter case the bidder must insert a generous allowance for contingencies in his bid. The best and most skillful architect is the cheapest in the long run.

(g) Design premises.—Severe restrictions on cost control are sometimes imposed by the environment or by the tastes, likes, dislikes, preferences and prejudices of the governing board or the architect. Sometimes an existing building must be matched in every detail, and costs are thereby fixed. In some cases there is resistance to new concepts of design that might present substantial savings. Educational structures are too often limited by traditionalism and the requirement that they be monumental rather than functional.

TABLE A. QUALITY LEVELS

Item	Lowest First Cost	Medium First Cost	Highest First Cost
Roofing	Roll roofing Asphalt shingles	Split shakes Asbestos shingles	Tile, Slate
Ceiling	Fiberboard tile	Plaster	Fireproof acoustical tile
Floor covering	Bare concrete	Lower grades of linoleum or asphalt tile	Hardwoods Best grades of linoleum or tile
Floor structure	Slab on fill	Supported wood floor	Supported floor on steel girders
Exterior walls	Single siding on studs	Stucco on sheathing	Face brick, reinforced brick, adobe, stone
Insulation	None	Minimum in roof only	Heavy insulation in roof, walls & partitions
Hardware	Plated steel	Medium grade	Solid bronze or brass
Plumbing fixtures	Low grades Floor-mounted toilets & wash sinks, wall-hung urinals, cold water only	Medium grades Hot water in all lavatories	High grades Wall-hung toilets, full-height urinals, Wash fountains, hot water throughout
Toilet room finish	Painted plywood cement floor, wood partitions	Cement-plaster walls, steel partitions	File finish, terrazzo or tile floor, marble partitions
Chalkboards and tack-boards	Low grade boards applied directly on walls, wood trim	Medium grade with flexible mounting	Top grade or slate, aluminum hardware, plywood backing
Painting	Exterior unpainted or one-coat stain. Two-coat job, cheap paints specified	Three-coat job Average paints specified	Wax over finish inside. Three or more coats; best paints specified
Cabinetwork	Mill-made soft woods, linoleum tops, one-coat stain finish, min. hgt. & depth	Hardwood tops Standardized units Adequate size	All hardwood Tile counters Stainless steel sinks, acid proof. All specialized
Light fixtures	Cheap grades Sparsely spaced	Average grades Adequately spaced	High quality Spaced for high level of illumination
Glass	Single strength B grade common	Double strength A or B grade	Plate, structural or safety glass
Paving	Water-bound rock or natural surface	Oiled surface on minimum subgrade	Heavy rock sub-grade Asphalt surface
Sash	Wood sash, minimum number operable Maximum use of fixed glass in stops	Wood or steel sash nearly all operable	Steel or aluminum sash, all operable
Heating	Gas space heaters in each room	Radiant panel heating; central air heating	Steam radiators Refrigerant cooling
Ventilation	Natural with few operable sash, no fans	Natural, adequate openings and vents. Fans in some rooms like toilets	Artificial, with sealed building and all spaces automatically ventilated
Corridors	Side corridors open. Connecting walks only. Ceilings unfinished	No heat in corridors. Covered connecting corridors, plastered ceilings	Glassed-in corridors, heated. Acoustic ceiling

TABLE B. COMPLETENESS

Item	Lowest First Cost	First Cost Medium	Highest First Cost
Classroom cabinets	Bare minimum Sinks only in a few special rooms	Reasonably complete. Standardized designs. One sink in most rooms	Complete for every educational purpose. Tailored designs Two sinks per room
Chalkboards and tack-boards	Bare minimum in number and size	Adequate in number and size	Every available wall space covered. Extra hgt. and width
Sanitary facilities	Barely meeting code requirements Concentrated in few rooms	Adequate in number, well dispersed	Meeting highest requirements, wide dispersal, short walking distances
Light fixtures	Minimum for janitorial use installed	Install part of wattage as low-level daylight supplement only	Complete installation of full wattage for high-level night lighting
Auxiliary facilities	Nothing but simple classrooms and toilets	Partial provision for storage, janitorial, administration, assembly, teachers, cafeteria	Full provision for all auxiliary storage, administrative and faculty facilities
Special equipment	No provision for PA, intercom, and visual aids. Few elect. outlets	Conduits only for future installation of PA, intercom, etc. one or two outlets per room	PA and intercom installed. All roomdarkened for visual aids. Four or more outlets per room
Playground development	No development	Leveling only	Backstops, grading, surfacing, equipment

TABLE C. SITE DEVELOPMENT

Item	Lowest First Cost	Medium First Cost	Highest First Cost
Grading & excavation	Minimum needed, short hauls	Moderate earth moving, all mat'l on site. Digging fairly easy, no old foundations	Hard cutting in rock Steep site. Imported fill, old work to remove
Paving	None in contract	Small areas adjacent to buildings	Extensive areas of the site paved, curbs, gutters
Condition of site	Level, dry, clear accessible, good streets	Average condition	Trees, building, foundation to remove, lines to move, poor accessibility
Fencing	None in contract	Good quality in moderate amount Straight runs	Extensive and difficult fencing. High quality specified
Drainage	No problem	Curbs and gutters adequate. Surface treatment will suffice	Subsurface drainage system, tiles, dry wells, gratings, catch basins, conduits.

TABLE D. UTILITIES AND SERVICES

Item	Lowest First Cost	Medium First Cost	Highest First Cost
Sewage disposal	Short run to adequate lines, easy soil conditions	Average or long run to mains, hard digging	Complete and costly disposal system with such items as ejection pumps, leaching beds
Electric service	Pole transformers by utility and short overhead run	Pole transformers, underground service	Transformer vault and transformers by owner. All underground
Water supply	Adequate supply close to buildings	Moderate runs to adequate main. Connection aver.	Long or difficult runs to main. Own well and pressure system or elevated tank
Gas supply	Simple, short and easy connection. No standby needed	Moderately difficult connection. Propane standby	Long runs under difficult conditions. Oil standby

A Small House in the White Hills

By Thomas Wistar, Jr.

When it comes to designing a small home in the "north country," it is pretty hard to beat the old timers, both in respect to their design and in their use of materials.

This general statement may seem to some to express a view which is quite reactionary, so let us qualify and clarify its meaning.

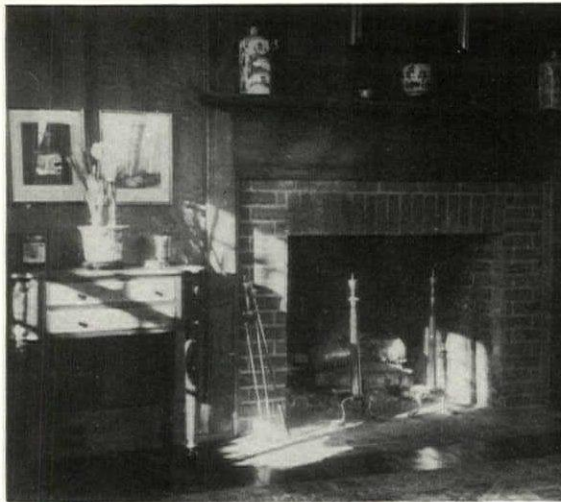
It is assumed that economy in construction and maintenance and general running expenses are primary concerns of the small home owner. By "old timers" is meant the real old timers, the early settlers of New Hampshire's hills of deep snows and winter winds. Force of circumstance required them to be both economical and practical in whatever they did. For the most part, they were limited in their use of building materials by what was to be had close by: lumber and ledge stone. Brick for their chimneys and glass for their windows and the nails for floor boards, siding, and roof shingles were about the only items not found or made on the building site. The methods and design of their construction was directly governed by these available materials.



Cottage in Lake Sunapee Region. Thomas Wistar, Jr., Architect, New London, N. H.

In plan these old New Hampshirites were typically compact, a cluster of rooms about a central chimney. In elevation they were "low

posted," and were covered by an unbro broad-spanned gable. This was the logical lution for providing a shelter that could most efficiently heated and offer protect against the cold and the ravages of se winters. Finally, these little hamlets are pl ing in appearance because they are thus essentially appropriate to their setting. has been aptly said, they fitted the patter life because they were shaped to it. Thi the very basis of good design.



Fireplace in Living Room of Cottage.

Today, for the builder of a small home the considerations of economy and practicality just as important. And up here in the "north country" the weather is a compelling factor restricting the possibilities of design and construction. It is true we are more free to digress from the old methods because we have developed new building techniques. But the same problems persist today as they did in the early days. Efficiency in heating the house and providing against the damaging effects of freezing and thawing are, perhaps, the most important of these problems. These have been more efficiently solved by the development of insulated stud walls and roof and the tight waterproofed concrete or block cellar wall. These innovations made possible the use of the modern automatically controlled furnace-fired heating systems.

With these developments incorporated with the traditional hamlet design of this state the contemporary designer of a small dwelling does not have to look far to find a well rounded perfect model. They may be found in every village and on every hillside in New Hampshire.

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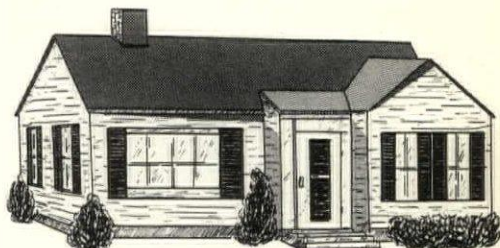
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This list corrected to February 1, 1950.

(Continued from page 7)

OUTLINE FOR BUILDING NEW SCHOOLS

neither the architect nor anyone else can do much to influence cost either up or down.

- (6) Don't make changes in the final plan unless you expect to reimburse the architect for these costs. Any changes should be made during the preliminary stages. Changes can be easily made.
- (7) Don't invite a contractor to bid on the work to whom you would not award the work. He should be low bidder.

N. H. Engineers Meet in Manchester

A dinner meeting of the New Hampshire Society of Engineers will be held at the Hampshire Hotel, Manchester on Friday, February 17 at 6 P. M. A representative from the New York Society of Professional Engineers will be the guest speaker, giving a talk on the organization and activities of the New York Society. Movies of general interest will be shown.

Architects Submit Samples of Work in Traveling Exhibition

Fourteen architects have indicated that they will submit entries in the Traveling Exhibition of work by New Hampshire architects, sponsored by the New Hampshire Chapter, A. I. A.

The first showing will be held at the Public Library in Concord through the month of March. Each architect is limited to two entries and the mounts will be 20" x 30" in size. Additional entries may be made before March 1 by notifying Eric Huddleston, Chairman of the Exhibition Committee, and by sending the material to Lyford and Magenau in Concord who are in charge of the exhibit there.

Itinerary and architects in charge for the succeeding months are as follows:

Architect in Charge	Place	Time
Tracy & Hildreth	Nashua	April
M. E. Witmer	Portsmouth	May
Huddleston-Thomas	Dover or Durham	June
Norman P. Randlett	Laconia	July
Thomas Wistar, Jr.	New London	August
Hudson & Ingram	Hanover	September
Koehler & Isaak	Manchester	October

The Committee will welcome comments and criticisms relative to the exhibition, as well as suggestions for showing the work of some of the fine work being done by architects in New Hampshire.

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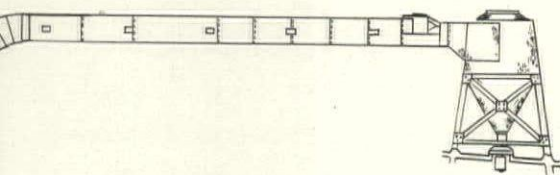
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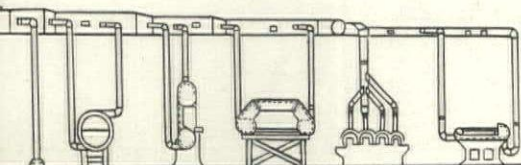
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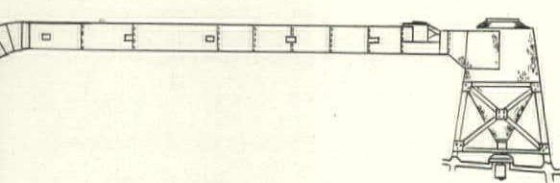
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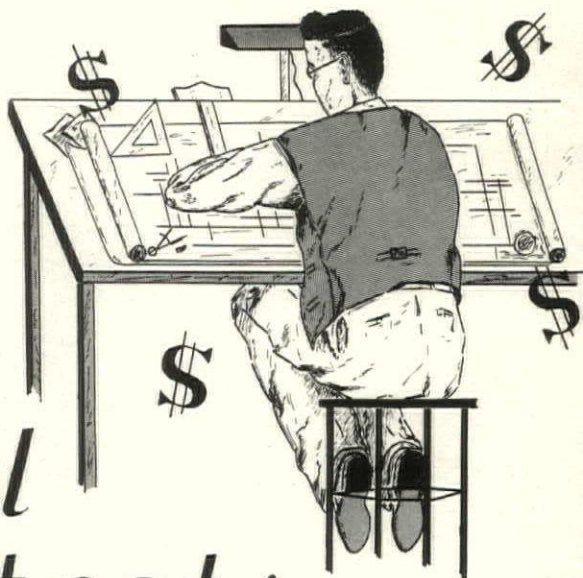
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